NOTES ON THE EARLY STAGES OF *ORSOTRIAENA MEDUS MOIRA* WATERHOUSE & LYELL AND *MELANITIS CONSTANTIA* CRAMER (LEPIDOPTERA: NYMPHALIDAE: SATYRINAE) FROM TORRES STRAIT, AUSTRALIA

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Abstract

The distinctive early stages of *Orsotriaena medus moira* Waterhouse & Lyell are described from northern Australia and compared with those of the closely allied *Mycalesis* spp. Cluster laying and larval gregariousness are recorded for the first time in *Melanitis constantia* Cramer and the early stages are described.

Introduction

Within Torres Strait *Orsotriaena medus moira* is known from Darnley, Moa, Prince of Wales (Common and Waterhouse 1981) and Mer Islands (Wood 1987) and has been taken recently by the authors on Saibai, Dauan and Thursday Islands. The life history was unknown in Australia and the early stages were presumed to resemble those of the Indian subspecies (Common and Waterhouse 1981, D'Abrera 1977).

Melanitis constantia was discovered recently on Mer Island (Johnson *et al.* 1994) and on a subsequent visit eggs were obtained from captive females in order to describe the early stages.

Orsotriaena medus moira Waterhouse & Lyell

Egg. Spherical; smooth, white, 1.0 mm in diameter.

Larva (Fig. 1). First instar: Length 4-6 mm; head pale cream with brown blotches ventrolaterally and across anterior occipital region; 7 pairs of stout curved setae with lateral and dorsal pairs arising from rounded tubercles; body translucent yellow turning green after feeding; faint dorsal and dorsolateral white lines; thorax bearing a transverse row of 6 long setae each arising from a white tubercle; abdominal segments bearing pairs of dorsal, dorsolateral, lateral and ventrolateral long pale setae; anal plate with a dorsal pair of fleshy tubercles and 3 basal setae. Second to final instars: Length 8-38 mm; head pale cream with a pair of long, pointed, anteriorly directed pink horns; maroon lateral stripe extending from tip of horn to posterior occipital margin; numerous short spines; mandibles brown; 2 pale crescentic areas from lateral margin to median sulcus; body white, covered in short pale setae with expanded tips; broad cream dorsolateral line and white lateral line extending to ventral surface; thoracic and abdominal segments with an anterior row of long curved setae; anal plate with a pair of backwardly directed pink spines.

Pupa (Fig. 3). Elongate with a small thoracic ridge; anterior end produced into a long horn; pale brown with a dark brown lateral line from dorsal wing case to tip of horn; abdominal segments with faint brown ventrolateral lines and scattered small brown dots; suspended with the ventral surface uppermost from a vertical stalk of grass. Length 20 mm.

Observations. Females were taken in April flying amongst *Imperata* sp. on Dauan Island, Torres Strait and readily laid eggs when enclosed on this grass. Eggs were laid singly beneath leaves of the grass and were taken to Townsville where larvae were reared successfully on *Panicum maximum* Jacq. The solitary larvae remained on the foliage until pupation. The prepupa (Fig. 2) differs from other satyrines by resting head upwards on a vertical stalk of the host grass and falling backwards to suspend itself with the ventral surface uppermost. The pupa resembles a dried leaf base.

The larva of *O. m. moira* differs only in colour from that of *O. m. mandata* (Moore) from southern India and Sri Lanka (Davidson and Aitken 1890). The pupae of the two subspecies appear very similar. The descriptions by Common and Waterhouse (1981) of 2 pairs of horns on the larval head and by D'Abrera (1977) of pronounced cephalic horns on the pupa appear to be errors.

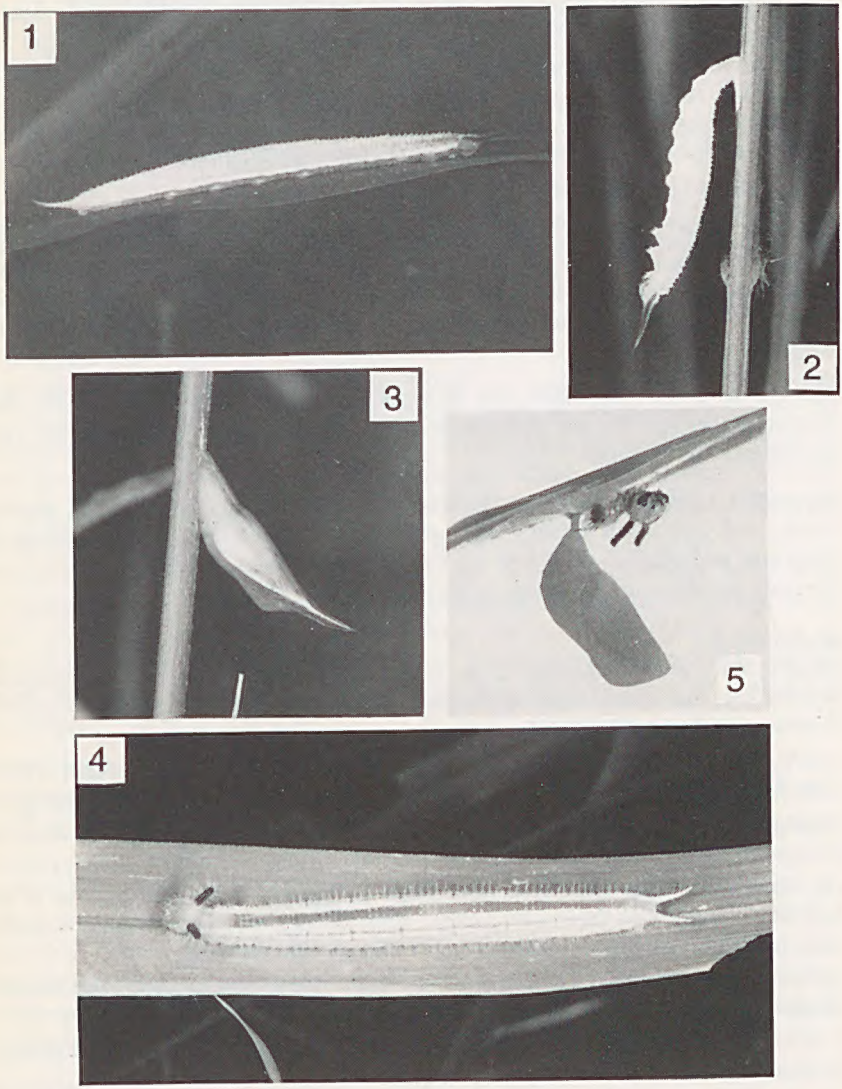
The early stages of the 3 *Mycalesis* spp. from northern Australia have been described by Braby (1994) and are similar to each other and typically satyrine in form. The larva of *O. m. moira* is also satyrine in form but differs from those of *Mycalesis* in the elongation of the anterior and posterior horns. The peculiar habit of the prepupa and the angular and elongate pupa of *O. m. moira* show marked divergence from *Mycalesis* and the usual satyrine condition. These differences support the generic separation of *Orsotriaena* Wallengren from *Mycalesis* Hübner.

Melanitis constantia Cramer

Egg. Spherical; yellow, 1.5 mm in diameter.

Larva (Fig. 4). First instar: Length 7-11 mm; head cream, covered in long dark setae; frons and mandibles brown; body pale whitish-cream becoming green after feeding; single dorsolateral white line on thorax becoming bifid on abdominal segments; thoracic segments with a row of 9-10 long pale setae; abdominal segments with pairs of dorsal, dorsolateral and lateral setae; anal plate with a pair of dorsal fleshy protuberances bearing numerous long curved setae. Second to final instars: Length 12-55 mm; head cream with a broad yellow lateral stripe; ocelli black; mandibles brown; lateral brown patches becoming black in final instar; a pair of stout dorsal horns, apically black; body green; dorsal white stripe bifid on abdominal segments; narrow lateral and ventrolateral white lines; posterior horns translucent cream.

Pupa (Fig. 5). Smooth, green. Length 15-18 mm.



Figs 1-5. Larva and pupa of *Orsotriaena medus moira* and *Melanitis constantia*. (1-3): *O. m. moira*; (1) mature larva; (2) prepupa; (3) pupa. (4-5): *M. constantia*; (4) mature larva; (5) pupa.

Observations. Captive females taken in April on Mer Island, Torres Strait, laid eggs in batches of up to 13. Larvae were reared in Townsville on *Panicum maximum* and *Imperata cylindrica* (L.) P. Beauv. The larvae were gregarious, remaining together in some instances until just prior to pupation. All larvae reared on *I. cylindrica* died in the second instar and 90% of larvae reared on *P. maximum* failed to complete development, suggesting that neither plant is likely to be used naturally.

On Mer Island the adults appeared to be restricted to rainforest and were encountered most commonly in cleared areas used as gardens. Sugar cane *(Saccharum* sp.), which is known as a host in Papua New Guinea (Parsons 1991), is grown commonly in the gardens on Mer Island and is a likely natural host.

The larvae of *M. constantia* can be separated readily from those of *M. leda bankia* (Fabricius) by the prominent white stripes. The pupae of the two species are very similar.

Mycalesis constantia is unusual amongst satyrines in the habit of cluster laying and gregarious larvae. Stamp (1980) did not record cluster laying in Satyrinae and *Neope* sp., listed by Chew and Robbins (1984), appears to be the only previous record in the subfamily.

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